

fernald **Report**

O c t o b e r 1997

Inside

- Cleanup Progress Update
- Fernald Neighbors Receive Water
- Aquifer Cleanup
- Team Member Saves Life

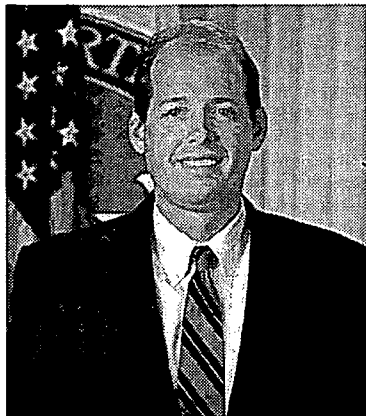


message from

Jack Craig & John Bradburne

DOE Awards Fluor Daniel Fernald Two-Year Contract Extension

During the past five years, we've seen many changes at Fernald. Our skyline has been altered with the demolition of Plants 7, 4 and 1. We've shipped thousands of tons of waste to Nevada for safe disposal. Our Advanced Wastewater Treatment Facility has treated more than a billion gallons of contaminated water from the aquifer. And most important, our stakeholders have been actively involved in the decision-making process. Together, we've paved the way for accelerated cleanup, saving taxpayers' billions of dollars.

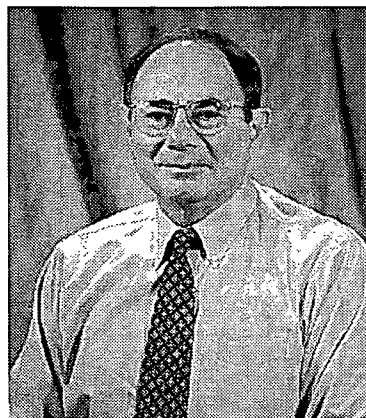


So I'm pleased that Fluor Daniel Fernald is receiving a two-year contract extension and I'm confident that it will continue to carry out this site's mission safely, efficiently, and cost-effectively.

The next two years at Fernald will be very exciting. Buildings will continue to come down while the On-Site Disposal Facility goes up. Waste pit materials will be shipped off-site in railcars. Our use of technology to safely and efficiently prepare buildings for dismantling will continue to lead the DOE complex.

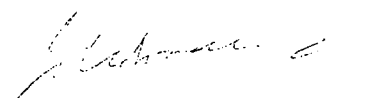
I encourage you to reflect on our past accomplishments, then join me in turning to the future and continuing to focus on the tasks ahead of us.


Jack Craig
Director, DOE-FN



By extending our contract, DOE recognizes the valuable work we've accomplished during the past five years. This includes dramatically accelerating site cleanup, reducing site waste inventories and building a strong public and employee involvement program. While I'm pleased about the contract extension, I recognize that we must work harder for our customers. I'm committed to improving our performance in health and safety, self-assessment programs and management of nuclear material.

Our mission is clear: "Together, DOE and Fluor Daniel Fernald are committed to safely restoring the Fernald site to an end state which serves the communities' needs, and we will do this at an accelerated pace and in a fiscally responsible manner." The visible work at Fernald has just begun. We will fulfill this mission--that is my commitment to DOE, our stakeholders, and regulators. Not only that, our team will meet and exceed the high marks that DOE has set forth. We look forward to completing this project together as partners, with a shared vision of Fernald's future.


John Bradburne
President, Fluor Daniel Fernald

Fernald Neighbors Now Receiving Public Water

Residents near the Fernald site now receive public water through a distribution main connected to the Cincinnati Water Works' Bolton Plant in Fairfield.

This final residential connection completes the Crosby Township Public Water Supply Project, providing approximately 130 township residences with free service connections.

In 1993, the DOE vowed to provide a public water supply to all residences and businesses potentially affected by the south groundwater contamination plume and provided a grant to the Hamilton County Board of Commissioners. This plume resulted from past uranium metal production operations at Fernald. The uranium-contaminated portions of the Great Miami Aquifer are being cleaned up beneath and just south of Fernald property. The project also includes a 500,000-gallon reservoir on Crosby Road.

The DOE funded about \$6 million as its share of the \$10 million Public Water Supply Project, coordinated by the DOE-FN office, the Hamilton County Department of Public Works and the Cincinnati Water Works. The U.S. Environmental Management Agency, the Ohio Environmental Management Agency, area residents and other groups provided input to the project and were kept abreast of its progress.



The Public Water Supply Project involved construction of a pipeline network connecting the Cincinnati Water Works to the Crosby township area. (6001-145)

Green-is-Clean Program Saves \$500,000

Through the simple task of sorting trash, Fernald employees have saved a half-million dollars.

In the past, all waste from Fernald's Radiologically Controlled Areas was handled as low-level radioactive waste and sent for burial at the Nevada Test Site. Four years ago, through the Green-is-Clean trash segregation program, employees began to sort out the non-contaminated trash from the office, break room and restroom areas and dispose of it as simple sanitary waste. Using a combination of administrative controls, process knowledge, and careful monitoring, employees make sure the material meets the release criteria, thereby reducing the volume of trash headed for burial in Nevada.

Since the program began, more than 90,000 cubic feet of trash has been earmarked as sanitary waste, resulting in \$500,000 in savings.

Cleanup **Progress** Update

Operable Unit 1



Waste Pits Remedial Action Project

- Completed Site Improvements Project — consists of preparation activities in future waste pit process area, including utilities preparation, installation of rail scales, load-out area preparation, and "original" North Access Road upgrades
- Continued on-site rail infrastructure upgrade
- Continued Okeana trestle construction and began construction of Paddy's Run trestle
- Awarded contracts for Camp Run and Wynn Road off-site trestle upgrades, and contract for installation of an on-site locomotive maintenance building

Operable Unit 2

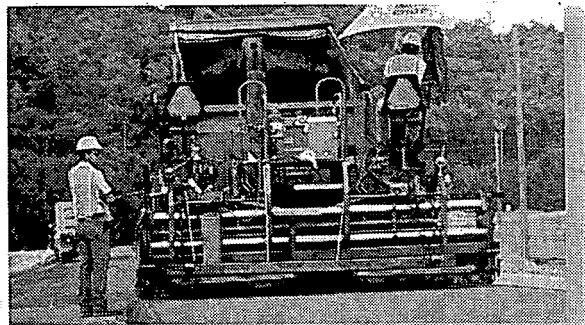
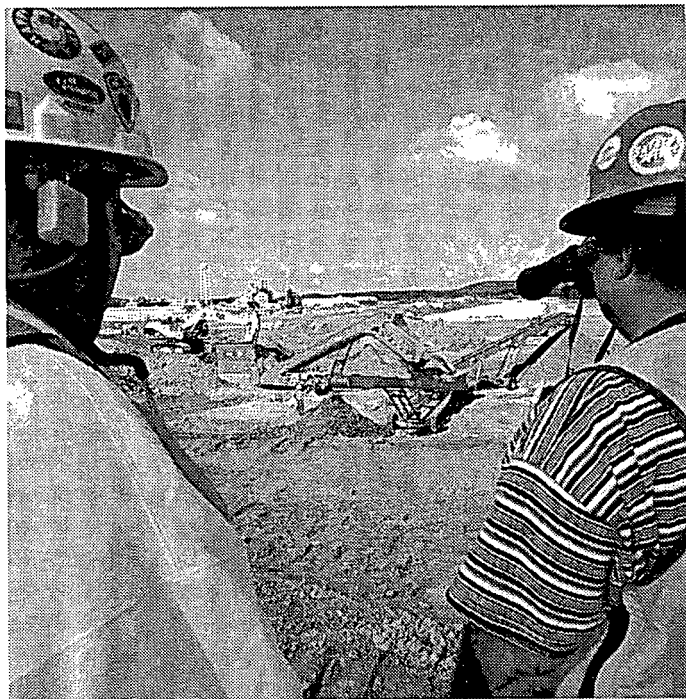
On-Site Disposal Facility

- Completed installation of Cell 1 compacted clay liner and horizontal groundwater monitoring well
- Completed installation and testing of western portion of Leachate Conveyance System
- Installed gravel base/geotextile for relocated North Entrance Road and portions of the haul road
- New north access road to open in late October

Above; CSX employees upgrade rail lines on the Okeana Trestle. (6349-1118)

Right; Safety coordinators observe the operation of a hydro-screen in use at the On-Site Disposal Facility. (6319-612)

Far Right; Workers add base asphalt to the rerouted North Access Road. (6319-612)



September 1997

Operable Unit 3

Facilities Closure & Demolition Project Safe Shutdown

- Completed holdup material removal in selected areas of Plant 2/3, Plant 8, and Building 69
- Completed energy isolation procedures in Bldgs. 69 and 32
- Removed MAWS equipment (left over from former Minimum Additive Waste Stabilization Project) from Plant 9 for potential reuse

Decontamination & Dismantlement (D&D)

- Plant 1 — Completed packaging of waste materials for shipment to Nevada Test Site
- Boiler Plant/Water Plant — Continued asbestos abatement/removal activities
- Thorium/Plant 9 — Issued Notice to Proceed to subcontractor

Operable Unit 4

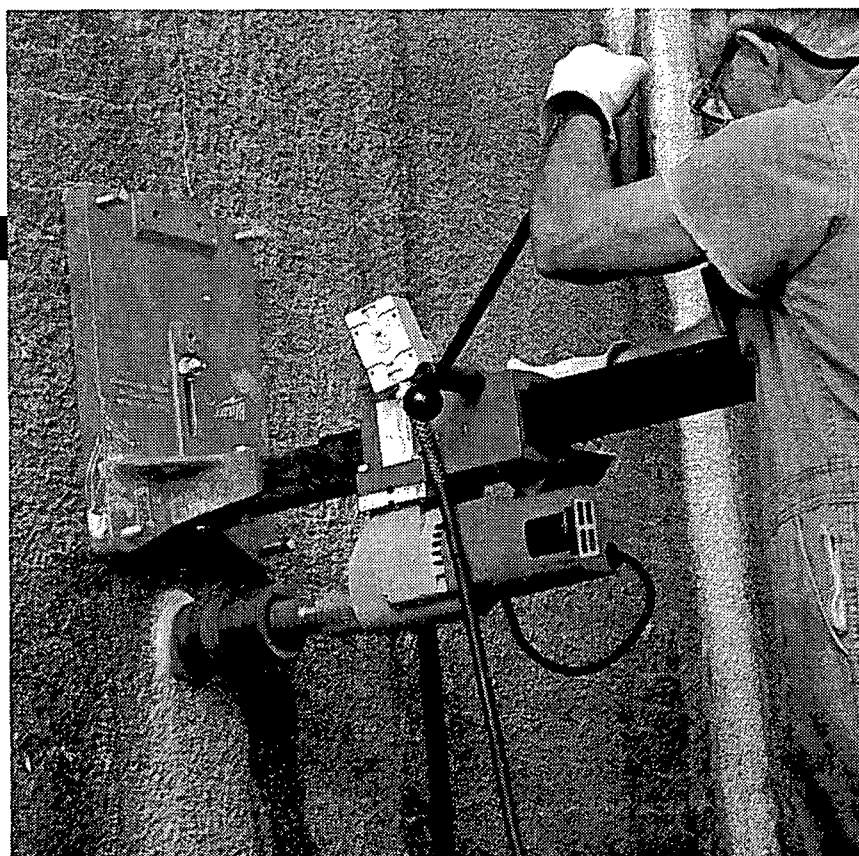
Silos Project

- Prepared and submitted Silo 3 Explanation of Significant Differences to regulatory agencies — received conditional approval from Ohio EPA
- Submitted work plans for Structural Steel Debris Recycling and Railroad Track Recycling Projects (Supplemental Environmental Projects from OU4 Dispute Resolution Settlement)
- Completed core sampling of Silo 4 and performed initial compressive strength tests on wall cores — initiated core sampling design for Silos 1, 2, and 3
- Issued *Commerce Business Daily* announcement for Silos 1 and 2 Multi-Tech Proof-of-Principle testing



Left; Worker applies lock down to transite panels removed from the Boiler/Water plant. (6407-208)

Below; Team member drills a core from Silo 4 in order to test the integrity of the concrete. (6697-2)



Cleanup **Progress** Update

Right; Project geologist cleans equipment used to collect samples in the design of the footing and slabs for the water tank and pumping station. (6652-7)

Below; Worker places fill over the Geofill on the south end of the Haul Road. (6319-598)



Operable Unit 5

Aquifer Restoration & Waste Water Project

- Began contractor mobilization for combined South Field Extraction System, Injection Demonstration, and South Plume Optimization Projects
- Continued construction on Advanced Wastewater Treatment (AWWT) facility expansion
- Continued construction on AWWT Ion Exchange Regeneration System — construction is nearly complete, with a scheduled start date of March 1998
- Awarded contract to Orbit Movers and Erectors for relocation of Sewage Treatment Plant

Operable Unit 5

Soils Characterization & Excavation Project

- Discovered Paddy's Run embankment erosion west of K-65 Silos — notified regulatory agencies and initiated associated activities, including weekly inspections, radiological and archeological surveys, development of project-specific sampling plan, etc.
- Received Area 2 Phase I (Southern Waste Units) contractor's Safe Work Plan submittal and initiated Site Preparation Package work with installation of perimeter fencing
- Conducted field sampling activities in support of data generation for remediation efforts in Area 1 Phase II (Southern Half of East Field) and Area 2 Phase I

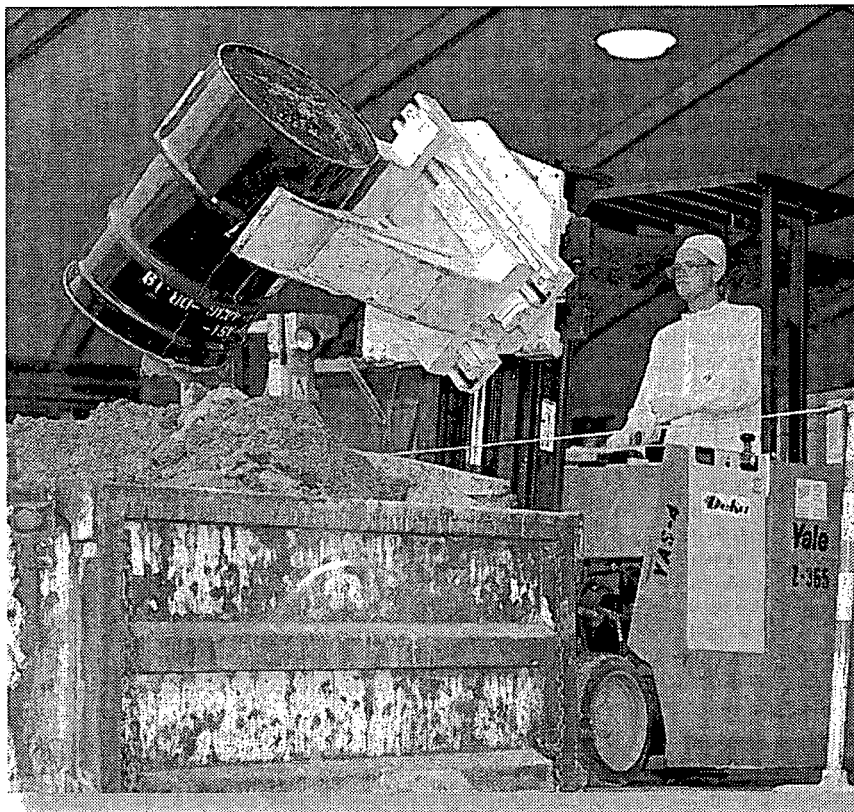
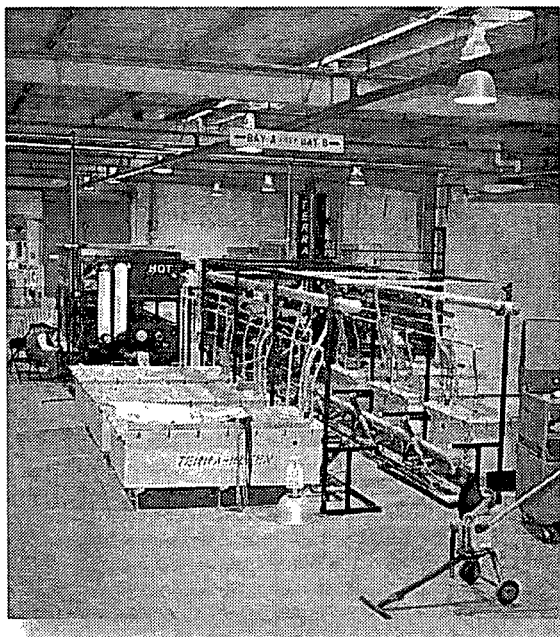


September 1997

Waste Management Nuclear Materials Disposition Projects

- Organic Extraction Project (RCI/Terra-Kleen)
— Began operations; completed solvent washing of soils and sludges
- Thorium Legacy Waste Stabilization Project
— Began waste characterization process
- Held construction kick-off meeting for T-Hopper Project — project involves repackaging of low enriched materials presently stored in T-Hopper containers (located west of Bldg. 65) into 55-gallon drums
- Shipped 32 drums of depleted UO₃ to Carolina Metals Inc. in support of Ducrete Technology Deployment Initiative
- Signed contract with BNFL for sale of 2.6 million pounds of enriched materials — contract forwarded to EURATOM Supply Agency for final approval
- Issued Request for Proposal for sale of remaining low enriched uranium inventory

*Below; Building 80 Organic Extraction Project
(6444-100)*



Above; Using a hand stacker equipped with a barrel turner. Motor Vehicle Operators dump drums of contaminated soil into a dump truck for transfer to the soil piles. (6646-2)



Left; Among the FEMP's product inventory are uranium derbies; each weighs between 300 and 375 pounds (3578-8).

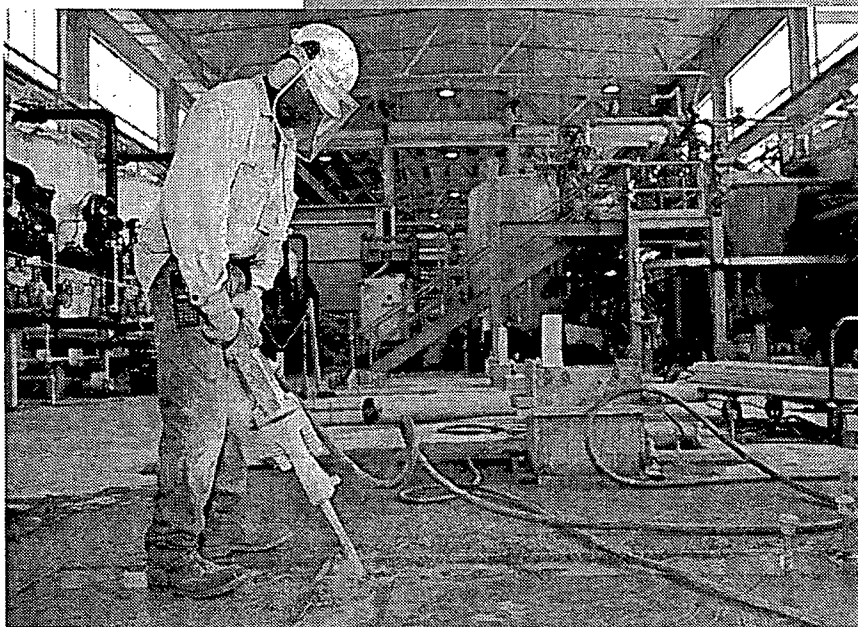
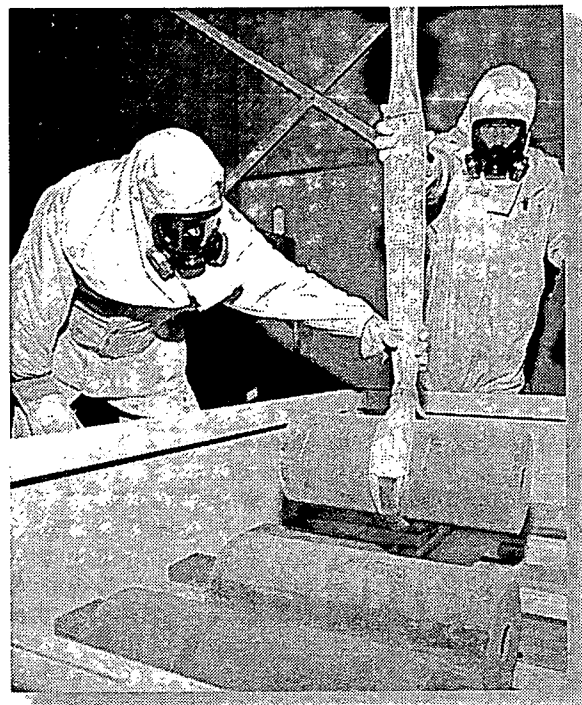
Projects Coordinate for Safe, Efficient Uranium Packaging

Right; Workers in Plant 6 load depleted ingots into a metal box for storage/shipment.
(6645-4)

Fernald employees are ever closer to meeting the accelerated cleanup schedule because of an intensive, integrated campaign to package materials.

To accommodate the schedule for Safe Shutdown activities in the Plant 6 annex area, employees of Nuclear Materials Disposition filled 275 half-high white metal boxes with more than 1,700 pieces of uranium within a three-month period. This effort was completed with zero OSHA recordable injuries, zero reportable personnel contaminations, and only one first aid case.

Because the disposition of these materials is uncertain, the pieces were packaged for shipment as product or waste. In the meantime, they'll be stored on the Plant 1 pad. In addition, 52 ingots were moved from the annex to another area of Plant 6 for sampling by a potential customer.



Above; Worker installs skid leveling plates for new tanks in preparation for the AWWT expansion.
(5531A-918)

Expansion Accelerates Aquifer Cleanup

A major expansion of the Advanced Wastewater Treatment Facility will soon accommodate additional groundwater treatment needs as the new remediation wells come online in 1998. Over the past several years, development of an extensive system for wastewater conveyance, holding, treatment and discharge has been under way at Fernald to meet effluent discharge requirements.

Construction began in February and is scheduled for completion in March 1998. The expansion includes new underground groundwater supply, effluent piping, all new above-ground pipe support systems, plus groundwater supply and effluent strainers on new concrete foundations. A new power supply panel and motor control center has been added, along with six skid-mounted ion exchange vessels and four skid-mounted multimedia vessels. After expansion, the facility will be able to treat 2,400 gallons-per-minute.

Small Businesses Benefit From Mentor-Protege Program

After completing a two-year pilot Mentor-Protege Program, three of Fluor Daniel Fernald's subcontractors were recognized by Honorable Elizabeth Moler, Deputy Secretary of the Department of Energy, during a formal graduation ceremony at DOE headquarters in Washington D.C.

The program provides historically underutilized businesses with management, technical and business resources to assist in their growth, development and economic self-sufficiency. In 1995, these three local firms--Horizon Environmental Group, Village Building Services, and International Consultants Inc.--were chosen to participate.

All three businesses have headquarters in southwest Ohio: Horizon Environmental Group is a Cincinnati-based firm which addresses environmental issues and challenges; Village Building Services, also of Cincinnati, provides general construction services; International Consultants Inc. is a Dayton firm that provides engineering, scientific and other technical services.

For their efforts in exceeding the DOE's subcontracting goals at Fernald, the DOE and Fluor Daniel Fernald recently received a letter of commendation from the United States Small Business Administration.

"The DOE and Fluor Daniel Fernald are committed to conducting business with qualified local companies for goods and services to the greatest extent possible," said Jack Craig, director of the DOE-FN Office. "We'll continue to provide valuable assistance to small, disadvantaged, and women-owned businesses in the Tri-State area and throughout Ohio.

"Our mentoring program is task-oriented, and this provides the DOE with the most cost-effective and competent local contractors," said Fluor Daniel Fernald President John Bradburne. "It boosts local economies and demonstrates solid community citizenship". The company provides protege training programs and support services such as courses in safety and health, reporting techniques and practices, marketing tools and proposal preparation.

"By providing opportunities to enterprises owned by women and minorities, we're increasing the economic growth and development in the communities we serve and providing jobs by expanding the capacity of small businesses," Bradburne added. "Our experience at Fernald proves the valuable contributions these businesses make in terms of both quality and cost efficiency. Fluor Daniel's loan program is an excellent tool to provide assistance to small and minority-owned businesses."

Since Fluor Daniel Fernald assumed management responsibility for cleaning up Fernald in December 1992, the company has subcontracted the services of more than 500 Ohio businesses.



Above, Left to right; Gwen Jones, Milissa Johnson, John Bradburne, John Herman, Elizabeth Moler, Barbara Zilli, Daniel Eapen, Norm Pennington, Oscar Willingham, John Taylor, Harriet Richardson, Jack Craig, Ike Beediwala.



Above; Village Building Services, one of the firms who participated in the Mentor Protégé program.(6584-35)

*Jim Conner and
Nancy Van Cleave
(6665-1)*



Jim Conner honored for saving life

Fluor Daniel Fernald team member Jim Conner was honored recently during the President's Safety meeting for saving the life of fellow team member Nancy Van Cleave.

Conner was presented with Fluor Daniel's prestigious Silver Safety Cross Award by John Bradburne, president of Fluor Daniel Fernald, for his life-saving efforts. This is the first time a Fluor Daniel Fernald team member has received this award, which is given to those whose actions save lives.

In August, Van Cleave was eating lunch in the Fluor Daniel Fernald cafeteria when she began to choke. Conner, sitting nearby, noticed she was in distress, deter-

mined she was choking, then performed the Heimlich maneuver.

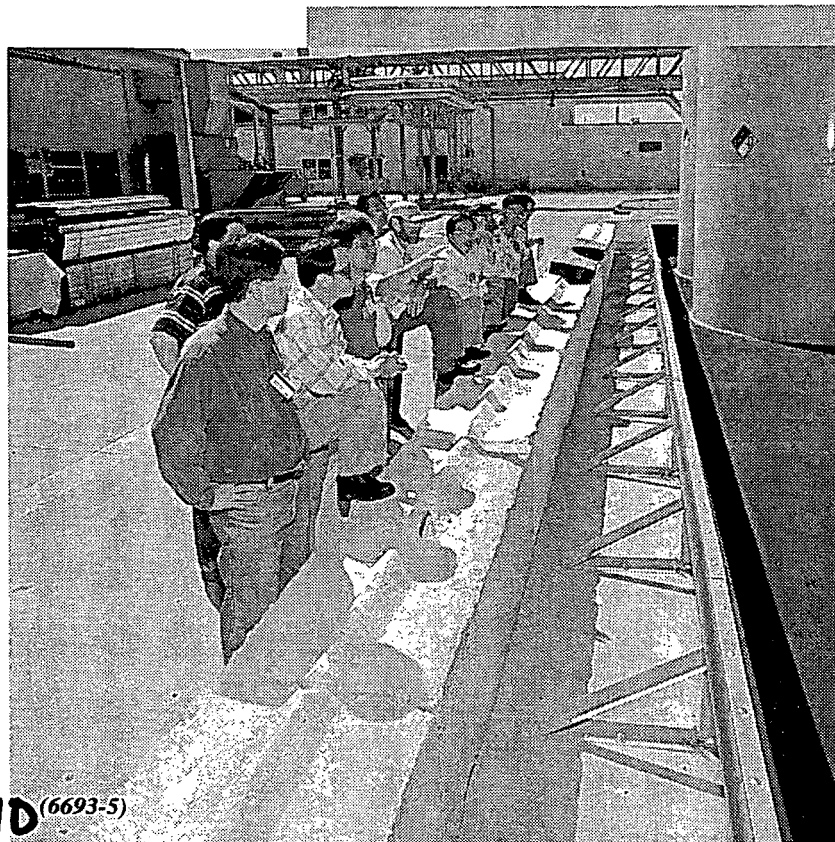
"I was very reassured when I saw Jim," Van Cleave recalled. Van Cleave was taken to the on-site medical facility and returned to work later that day.

"I had to ask her if she was, in fact, choking, because it could have been something other than an airway obstruction," Conner said. "It could have been a heart attack, and you do not want to do the Heimlich maneuver on a heart attack victim."

Conner, a member of the Emergency Response Team (ERT), had never performed the Heimlich maneuver before.

"You often wonder how you'll react," he said. "It happened so quickly that I didn't have time to think. I just reacted and knew exactly what to do because of my training. I think everyone should learn CPR and the Heimlich maneuver."

*Below: Fernald's
solvent extraction
process. (6693-5)*



Solvent Extraction Technology Demonstration Underway

The Rapid Commercialization Initiative (RCI) project at Fernald is now in the demonstration phase, and is attracting the attention of regulators, federal agencies and even foreign governments. Successful demonstration of this technology, which uses non-hazardous solvents to extract sludges, PCBs, and organic contaminated debris, will lead into Phase III which calls for the treatment of 270 cubic meters of mixed and tri-mixed waste.

The Solvent Extraction Process was developed by Terra-Kleen Response Group, Inc. Besides using a non-hazardous solvent, a recovery system allows for its collection and reuse. Once the mixed waste is removed, the treated waste is prepared for shipment and off-site disposal.

The RCI is important to Fernald since the extraction of organic wastes is necessary in order to meet Land Disposal Restrictions and the waste acceptance criteria of Envirocare.

10 (6693-5)



Legislators Tour Fernald

During September a number of state and federal legislators toured Fernald to see the cleanup progress firsthand. Pictured at left: John Bradburne, president of Fluor Daniel Fernald; Mary Mertz, executive assistant to Ohio Governor George Voinovich; Tom Greene, president, Tom Greene and Associates; Ohio State Senator Lou Blessing; Ohio State Representative Patty Clancy, and Glenn Griffiths, deputy director, DOE-FN

Documents Available At Public Environmental Information Center

- Summary of the Sept. 9 Cleanup Progress Briefing
- Transmittal of the Final On-Site Disposal Facility Groundwater/Leak Detection and Leachate Monitoring Plan. This document represents the groundwater/leak detection and leachate management monitoring program for the on-site disposal facility at Fernald.
- Transmittal of the Operable Unit 3 Plant 4 Project Completion Report.
- Lessons Learned Document for the Silo 3 Project
- Transmittal of the Draft Re-Injection Demonstration Test Plan
- Response to U.S. EPA and Ohio EPA Comments on the Proposed Use of Thorium-232 Final Remediation Level as a Basis for Assessing Attainment of all Final Remediation Levels in the Thorium Series.
- Summary of the U.S. EPA Public Meeting Concerning the Fernald Dispute Resolution Settlement Agreement Held August 26, 1997.
- Submittal of Work Plan for Recycling, Supplemental Projects. The requirement for this work plan was established by the U.S. EPA as part of the Operable Unit 4 dispute settlement. Although the dispute settlement defines two separate recycling supplemental projects, the approaches to recycling the materials are similar, supporting a combined activity. The DOE-FN proposes to perform two recycling supplemental projects by combining them to recycle between 600 and 1,000 tons of railroad tracks, structural steel, and other materials from the Fernald.
- Transmittal of Responses to U.S. EPA comments on the Geotechnical Sampling and Testing Plan for the Former Plant Area.

TDI projects get go-ahead

Fernald is slated to receive \$7.5 million from the DOE Office of Science and Technology to accelerate cleanup of the site through improved technology.

Team members in the DOE-FN Technology Programs will begin planning for four Technology Deployment Initiative projects proposed by Fernald. These involve rapid disposition of Fernald depleted uranium inventory for reuse, enhanced soil characterization, mixed waste processing equipment, and participation with other sites for more rapid decontamination and dismantlement.



Building a Dream

Making dreams come true—that's what the Cincinnati Habitat for Humanity is all about. And for members of the Maria Bell-Johnson family, that dream came closer to reality on October 12, at the groundbreaking of their new home.

Fluor Daniel Fernald is the largest single contributor to the house, located at 3829 Herron Avenue in South Cumminsville. Fernald team members will soon be found on the site, swinging hammers and paintbrushes with other vol-

unteers from the Westfed Coalition Team. The house should be completed next spring.

Since its inception in 1985, Cincinnati Habitat for Humanity has been responsible for building 28 homes in the greater Cincinnati area. Partner families must put in 500 hours of "sweat equity" in their own home and future housing for others. The home is then sold to the family through a no-interest, 20-year mortgage. Payments received from homeowners go directly into a fund to build more homes.

Volunteers are needed in all aspects of the project, from groundbreaking to occupancy. For more information, call Sue Walpole at 648-4026.

"Building a Habitat house transforms not only one family, it transforms a whole community."

— Former First Lady Rosalynn Carter

fernald waste **Shipping Report**

The volume, in cubic feet (cf), of low-level waste shipped to the Nevada Test Site (NTS) for September 1997 was 149,437 (external). As of September 30, 1997, Fernald has shipped 612,145 cf (external) of low-level waste to NTS for Fiscal Year (FY) 1997.

In July 1997, NTS placed Waste Stream 6 (Residues) on full suspension until Fernald adequately closes Corrective Action Requests, or until Fernald presents profiles during the annual review scheduled for October 1997.

The volume of low level waste materials shipped to NTS in September 1997 per waste stream is as follows:

Waste Stream	External Volume (cf)
Process Area Scrap	94,182
Thorium	6,745
Residues	0
Contaminated Trash	944
Construction (Legacy+New)	21,024
Stabilized Mixed Waste	0
Asbestos	26,542

The volume of low level waste materials shipped to NTS in FY 1997 (as of September 30, 1997) per waste stream is as follows:

Waste Stream	External Volume (cf)
Process Area Scrap	325,522
Thorium	106,523
Residues	68,062
Contaminated Trash	15,344
Construction (Legacy+New)	60,462
Stabilized Mixed Waste	9,690
Asbestos	26,542

*External volumes are equivalent to NTS burial volumes and are based upon the exterior dimensions of the container plus runners and associated void space between runners. (Runners are pieces of metal that are placed on the bottom of the boxes. The runners provide a 3-inch platform which keeps the box from having direct contact with the ground. The runners also enable forklifts to move the boxes.)



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